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Indian Standard

END-SUCTION CENTRIFUGAL PUMPS — BASEPLATE AND INSTALLATION DIMENSIONS

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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Indian Standard

END-SUCTION CENTRIFUGAL PUMPS — BASEPLATE AND INSTALLATION DIMENSIONS

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 3661 : 1977 'End-suction centrifugal pumps — Baseplate and installation dimensions' issued by the International Organization for Standardization (ISO), has been adopted by the Bureau of Indian Standards on the recommendations of Pumps Sectional Committee (HMD 20) and approved by the Heavy Mechanical Engineering Division Council.

In the adopted standard, certain terminology and conventions are not identical with those used in Indian Standards; attention is especially drawn to the following:

a) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

b) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below alongwith their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO/R 273 Clearance holes for metric bolts (Since published as ISO 273 : 1979 Fasteners — Clearance holes for bolts and screws)	IS 1821 : 1987 Dimensions for clearance holes for bolts and screws (*third revision*)	Identical
IEC Publication 72	IS 1231 : 1974 Dimensions of three-phase foot-mounted induction motors (*third revision*)	Technically equivalent
	IS 2223 : 1983 Dimensions of flange mounted ac induction motors (*second revision*)	
	IS 8223 : 1976 Dimensions and output ratings for foot-mounted rotating electrical machines with frame numbers 355 to 1 000	

The concerned technical committee has reviewed the provision of ISO 2858 referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard.

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1 SCOPE

This International Standard specifies the basic baseplate and installation dimensions for end-suction centrifugal pumps. Alternative numbers and locations of baseplate fixing holes are given to suit individual installations.

2 FIELD OF APPLICATION

The dimensions and other data given in this International Standard are intended primarily for use with centrifugal pumps in accordance with ISO 2858, coupled to foot-mounted electric motors for installation on a foundation.

Where suitable, this International Standard may be used for other types of pump.

3 REFERENCES

ISO/R 273, *Clearance holes for metric bolts.*

ISO 2858; *End-suction centrifugal pumps (rating 16 bar) — Designation, nominal duty point and dimensions.*

IEC Publication 72, *Dimensions and output ratings for rotating electrical machines — Frame numbers 56 to 400 and flange numbers F55 to F1080.*

4 BASEPLATE DIMENSIONS

The dimensions and the reference numbers of baseplates are given in figure 1 and table 1.

5 BASIC INSTALLATION DIMENSIONS

The baseplate number appropriate to a given pump designation and the corresponding electric motor frame number are obtained from table 2.

The dimensions of the baseplate corresponding to this number are then obtained from table 1 and the basic installation dimensions from the last four columns in table 2.

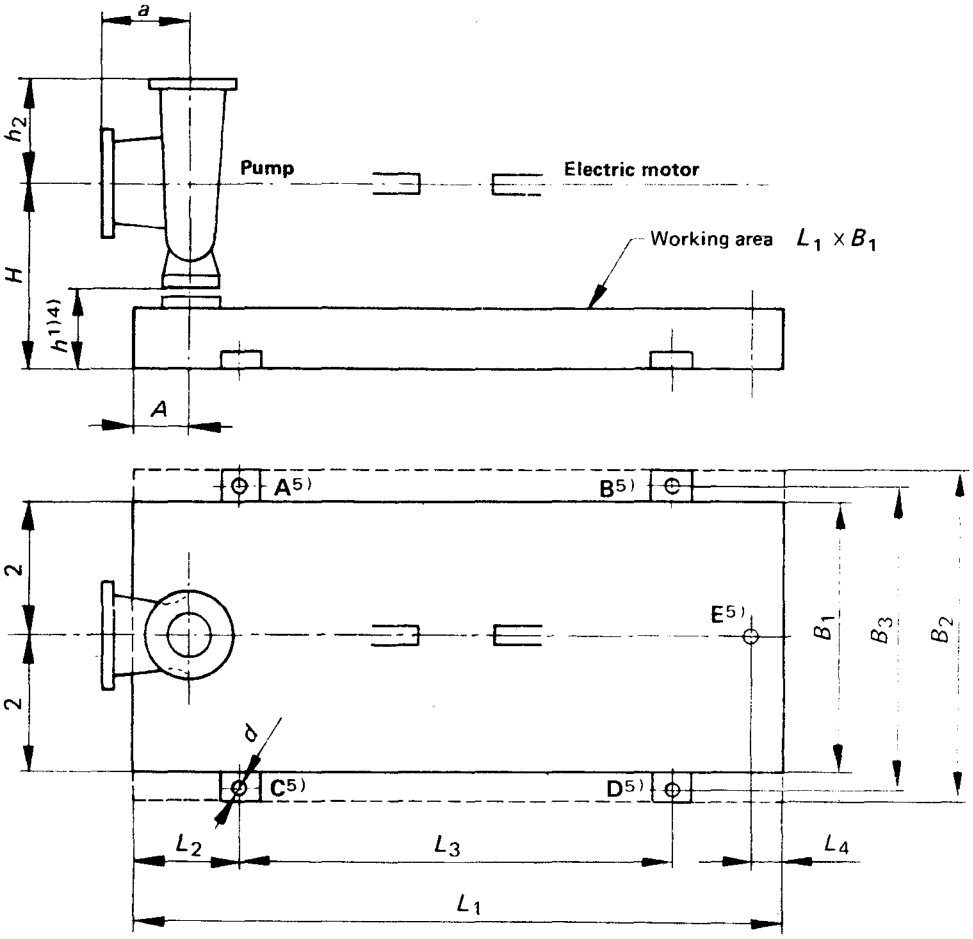

FIGURE 1 – **Basic baseplate and installation dimensions**

TABLE 1 – **Baseplate reference numbers and dimensions**

Dimensions in millimetres

Baseplate No.	2	3	4	5	6	7	8	9
L_1 6)	800	900	1 000	1 120	1 250	1 400	1 600	1 800
L_2	130	150	170	190	205	230	270	300
L_3	540	600	660	740	840	940	1 060	1 200
$L_4 \pm 25$	35	35	40	40	45	50	55	55
B_1	270	300	340	380	430	480	530	600
B_2	360	390	450	490	540	610	660	730
B_3	320	350	400	440	490	550	600	670
h_{max}	125	125	125	140	160	180	200	200
d* : clearance hole for bolt	M16	M16	M20	M20	M20	M24	M24	M24

* To ISO/R 273 (coarse series).

TABLE 2 — **Selection of baseplate number and installation dimensions**

Dimensions in millimetres

Pump size*			Electric motor frame No.** 71 M	80 M	90 S	90 L	100 L	112 M	132 S	132 M	160 M	160 L	180 M	180 L	200 L	225 S	225 M	250 M	280 S	280 M	Basic installation dimensions H_{max} 2)4)	A	h_2*	a*
50	32	125	2	2	2	3	3	3	4	4											260	60	140	80
50	32	160	2	2	2	3	3	3	4	4											260	60	160	80
50	32	200	2	2	2	3	3	3	4	4	5										300	60	180	80
50	32	250		4	4	4	4	4	5	5	6	6	6	6	7						380	75	225	100
65	40	125	2	2	2	3	3	3	4	4											260	60	140	80
65	50	125	2	2	2	3	3	3	4	4											260	60	140	80
65	40	160	2	2	2	3	3	3	4	4	5	5									300	60	160	80
65	50	160	2	2	2	3	3	3	4	4	5	5									300	60	160	80
65	40	200		3	3	3	3	3	4	4	5	5									300	60	180	100
65	40	250		4	4	4	4	4	5	5	6	6	6	6	7						380	75	225	100
65	40	315		5	5	5	5	5	5	5	6	6	6	6	7	7	7				405	75	250	125
80	50	125	2	2	2	3	3	3	4	4											260	60	160	100
80	65	125	2	2	2	3	3	3	4	4											260	60	160	100
80	50	160		3	3	3	3	3	4	4	5	5	5								320	60	180	100
80	65	160		3	3	3	3	3	4	4	5	5	5								320	60	180	100
80	50	200		3	3	3	3	3	4	4	5	5	5								320	60	200	100
80	50	250		4	4	4	4	4	5	5	6	6	6	6	7	7	7				405	75	225	125
80	50	315		5	5	5	5	5	5	5	6	6	6	6	7	7	7	8	9		480	75	280	125
100	65	125		3	3	3	3	3	4	4	5										300	75	180	100
100	80	125		3	3	3	3	3	4	4	5										300	75	180	100
100	65	160		3	4	4	4	4	5	5	6	6	6	6	7						380	75	200	100
100	80	160		3	4	4	4	4	5	5	6	6	6	6	7						380	75	200	100
100	65	200		4	4	4	5	5	5	5	6	6	6	7	7	7	7				405	75	225	100
100	65	250		5	5	5	5	5	5	5	6	6	6	7	7	7	7	8	9		480	90	250	125
100	65	315					6	6	6	6	6	7	7	7	7	7	8	8	9	9	480	90	280	125
125	80	160		4	4	4	5	5	5	5	6	6	6	7	7						380	75	225	125
125	80	200		5	5	5	5	5	5	5	6	6	6	7	7	7	7	8			380	75	250	125
125	80	250		6	6	6	6	6	6	6	6	6	6	7	7	7	7	8	9	9	480	90	280	125
125	80	315					6	6	6	6	6	7	7	7	7	7	8	8	9	9	480	90	315	125
125	80	400					7	7	7	7	7	7	7	7	7	7	8	8			480	90	355	125
125	100	200		5	5	5	5	5	5	5	6	6	6	7	7	7	7	8	9		480	90	280	125
125	100	250					6	6	6	6	6	7	7	7	7	7	8	8	9	9	480	90	280	140
125	100	315							6	6	6	7	7	7	7	7	8	8	9	9	480	90	315	140
125	100	400									8	8	8	8	8	8	8	8	9	9	480	110	355	140
150	125	250							6	6	6	7	7	7	7	7	8				450	90	355	140
150	125	315								8	8	8	8	8	8	8	8	8			480	110	355	140
150	125	400											8	8	8	8	8	8	9		515	110	400	140
200	150	250								8	8	8	8	8	8	8	8	8	9		480	110	375	160
200	150	315											9	9	9	9	9	9	9		515	110	400	160
200	150	400													9	9	9	9	9		515	110	450	160

* To ISO 2858.

See note 3

** To IEC 72 : Part 1.

NOTES

1 h_{max} is the maximum permissible height of the baseplate, including packing that may be used between the baseolate and the pump or motor. The actual height may be less.

2 H_{max} in table 2 is the maximum permitted height. The actual dimension H may be less. The values H_{max} given for each pump size take into account the maximum height for the greatest given baseplate number and the centre-line height of the pump or motor, whichever is the greater.

3 On the left side of the bold line in table 2, the centre-line height of the pump is the greater; on the right side the centre-line height of the electric motor is the greater.

4 Additional sub-structures, for example feet for free-standing installations, vibration dampers, are not included in the dimentions H_{max} and h_{max}.

5 Figure 1 shows the locations for five holes (A, B, C, D and E).

Baseplates may have either four (A, B, C and D) or three (A, C and E) holes as determined by the pump manufacturer.

6 In table 1, the dimensions L_1 and B_1 are the length and the width respectively of the working surface and do not include casting slope.

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